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DEVELOPMENT OF AREAS IN THE
VICINITY OF ACADEMIC INSTITUTIONS

A THESIS

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Jack Franklin Glatting

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SUMMARY

Most academic institutions have a relationship to the land use located in the vicinity of their campuses. The purpose of this study is to analyze this relationship and to suggest methods that can be used to achieve a desirable land use pattern in the university environs.

The first step in this process was to identify factors that affected land use in the vicinity of universities. It was found that the type of university, the size and characteristics of the university's population, and the policies adopted by the university can influence the demand for university-related developments. Existing land uses, community facilities, and land use regulations in the environs tend to modify the influence of the university on surrounding development.

The second step was to determine what types of land use frequently locate in the university environs. Existing land uses at a number of universities are discussed. They include housing, public and semi-public facilities, commercial facilities, and university-related research facilities. In addition, land uses surrounding four selected universities are studied in depth.

The study then suggests methods that can be used by both the community and the university to achieve a desirable development pattern in the vicinity of the campus. These methods include the use of special zoning districts, Section 112 of the urban renewal legislation, and university investment in the surrounding area.

CHAPTER I

INTRODUCTION

Academic institutions and their communities are both concerned with the type of development that occurs in the vicinity of the university campus. Academic institutions cannot provide all of the facilities needed by their populations. Many of these facilities can be provided off-campus by private individuals and developers. The community can assist the university to further its educational objectives by providing for and by encouraging appropriate related facilities to locate near the campus.

The university and the community must coordinate their planning efforts in order to achieve a desirable land use pattern in the areas near the campus. The university should create a campus plan while the community is generally responsible for preparing planning studies for the areas adjacent to the campus. An effective planning program for the university environs should coordinate university and community planning activities. Although the campus plan does not include areas beyond the campus boundary, various aspects of campus planning directly influence the development of these areas.

It is the purpose of this study to describe and analyze the relationship of the university to land use surrounding its campus. The potential for various types of related development is discussed and desirable land uses in the vicinity of academic institutions are sug-

gested. Methods that can be used by universities and their communities to encourage the appropriate development of adjoining land are recommended. This information will help municipal and university officials to achieve a better understanding of the development potentials of land in the vicinity of academic institutions. It may therefore be a useful aid to them in their future planning.

This study is limited to the land use relations between academic institutions and the surrounding community. Although a university has a variety of facilities and activities on-campus, only those that have a direct effect on land use in the vicinity of the campus will be considered. The term *vicinity* is intended to mean usually one-fourth mile from the campus boundary. This distance has been established by urban renewal legislation as the theoretical area of university influence on adjacent development.¹ However, land uses slightly beyond the one-fourth mile limit but still within walking distance will also be considered when they are obviously related to the university.

Information about development in the vicinity of universities is based primarily upon a review of published literature and field inspections of several university campuses. Land use plans, campus expansion studies, and urban renewal reports were the most frequent sources of published information. Special studies on university housing, commercial facilities, and employment opportunities provided information on particular aspects of adjacent development.

Four academic institutions were selected for detailed study. At these institutions personnel were interviewed and enrollment, housing, and employment records were studied. Persons affiliated with various

university-related facilities located near these campuses were also interviewed.

The following chapters of this thesis will study land use in the vicinity of academic institutions and will suggest methods to achieve a desirable land use pattern. Chapter II identifies and discusses factors that are influential in shaping the university's environment. Chapter III is an analysis of various types of university-related land use. Chapter IV presents a descriptive review of land use in the vicinity of four selected academic institutions. Chapter V suggests methods that can be used to influence and control land use in the university environs.

CHAPTER II

FACTORS SHAPING THE UNIVERSITY'S ENVIRONMENT

Although each university has a unique relationship to the land use surrounding its campus, certain factors are influential in shaping its environment. Six of these factors, three university factors and three community factors, are discussed in this chapter.

University Factors

University factors include: (1) the type of institution; (2) the university population; and (3) certain administrative policies.

Type of Institution

In this study, academic institutions are grouped into three categories: (1) multi-purpose universities, (2) single-purpose universities, and (3) undergraduate colleges. Multi-purpose and single-purpose universities have a greater impact on adjacent development than do undergraduate colleges. Undergraduate colleges tend to withdraw from the community, while multi-purpose and single-purpose universities often offer services to the community and make use of community facilities to supplement their on-campus facilities. Enrollment statistics and the number of each type of academic institution are given in Table 1.

Multi-Purpose Universities. A multi-purpose university has several separate educational programs. These may include architecture, business, the humanities, engineering, law, medicine, the social sciences,

various graduate programs, and others. In many cases, the engineering and medical programs have enrollments as large as technological and medical universities.

Table 1. Number and Enrollment by Type of Academic Institution in the United States

Type of Academic Institution	Number	Total Enrollment	Average Enrollment
Multi-Purpose Universities	146	1,905,931	13,054
Single-Purpose Universities			
Technological University	57	132,756	2,330
Medical University	87	79,278	912
Undergraduate Colleges			
Liberal Arts College	788	1,291,734	1,640
Teachers' College	186	436,944	2,350
Community College	577	627,806	1,085
Miscellaneous*	316	113,345	422
TOTALS	2,080	4,528,516	2,170

Source: *American Universities and Colleges*, 9th ed.

* This classification includes schools of fine art, theological schools, and others.

Multi-purpose universities are located in both large and small cities. Rurally-dominated state legislatures have favored small communities when choosing sites for state universities. However, academic institutions in large cities often evolve into multi-purpose universities.

Multi-purpose universities have larger enrollments than other types of academic institutions. This is because they have both the resources and the desire to expand their facilities. Multi-purpose universities are either state-supported or heavily endowed, prestige institutions. Most state-supported schools assume the responsibility of providing an educational opportunity for everyone who desires to attend college. Because of their academic excellence, well-endowed, prestige institutions attract large numbers of students. Most multi-purpose universities anticipate enrollments of about 20,000 students and a few as high as 40,000.

Historically, multi-purpose universities have had significant research programs. They began with land grant universities conducting agricultural research and have grown into well-rounded engineering, scientific, medical, and agricultural research programs. The research programs of multi-purpose universities enable them to support large numbers of graduate students.

The following description of a multi-purpose university by Clark Karr, President of the University of California, gives an insight into this type of academic institution.

It is not one community but several--the community of the undergraduate and the graduate; of the social scientist, the humanist, and the scientist; the communities of the professional schools, of all the non-academic personnel, of the administrators. Its edges are fuzzy . . . A community should have common interests; in the multiiversity, these interests are quite varied, often conflicting.²

Single-Purpose Universities. Technological and medical universities are the two most important types of single-purpose universities. They have highly specialized educational programs which require out-

standing faculties and expensive equipment.

Single-purpose universities are usually located in large cities which contain significant numbers of professional persons. Their location increases the opportunities for the exchange of ideas and knowledge between the faculty and the professional members of the community. The location of single-purpose universities further permits them to draw upon the technical and medical personnel of the community in order to supplement their teaching faculties.

Single-purpose universities have smaller total enrollments than multi-purpose universities, but they have a greater proportion of married and graduate students. Single-purpose universities also have significant research programs to further their educational objectives.

Undergraduate Colleges. Undergraduate colleges include liberal arts colleges, teachers' colleges, and community colleges. They are frequently located in suburban residential areas or in small communities. The students of undergraduate colleges are younger than the students of other types of academic institutions, and a smaller portion are married or employed. Most undergraduate colleges furnish adequate student housing on-campus or their students commute.

The University Population

The size and characteristics of a university's population are important factors in shaping its environment. Characteristics of various segments of the population--students, faculty members, and non-academic personnel--influence development in different ways.

Size. The size of the total university population influences the amount and type of facilities located near the campus. A university with

an enrollment of 25,000 students requires the same amount of services and facilities that are needed to serve a community of 92,000.³

The types of facilities located near universities vary with the size of the total enrollment. In order for some facilities such as hotel and good restaurants to locate near it, a university must have a large enrollment. Other facilities such as art theaters and cultural facilities are attracted to the environs of larger academic institutions because a significant portion of their potential market is concentrated there. Small institutions do not furnish an adequate market to attract these facilities.

The influence of the size of the university on surrounding land use is modified by the size of the community. A large university (University of North Carolina) located in a small city (Chapel Hill) dominates the land use pattern of the entire city. The direct influence of a small or even a large academic institution in a large city is usually limited. However, if the institution is large enough, it can still have a significant influence on surrounding land use. Columbia University is the anchor of an institutional district in New York City. The adjacent uses could not maintain a stable environment without the influence of this large university.⁴

Student Characteristics. Married students and graduate students affect the area surrounding a university more than do single and undergraduate students. Nationally, 60 per cent of all graduate students are married.⁵

Married students and graduate students have a tendency to find housing in the community. Married students need apartments that are

often not available on the campus, while those with children need larger apartments, schools, and other community facilities. Graduate students are older and more socially mature than undergraduate students. Single graduate students object to the turmoil of dormitory housing and do not accept the customary conduct regulations. They also need more space and equipment for study.

Most married students or their wives are employed. They generally attempt to find employment near the campus. Most universities provide employment for some married students and their wives. When both husband and wife attend classes or work near the campus, they prefer to live near the university.

Graduate students have more highly developed skills than undergraduate students; therefore more job opportunities related to their field of study are available to them. A study of part-time employment at two California campuses revealed that 60 to 85 per cent of the graduate students were employed part-time during the academic year, while only one-third to one-half of the undergraduate students were employed.⁶ Graduate students have more opportunities for employment on campus than do undergraduate students. In 1965, 30 per cent of the graduate students at The Georgia Institute of Technology were employed on-campus compared to only 10 per cent of the undergraduate students.⁷

Faculty Characteristics. The use of part-time faculty or faculty with off-campus employment can influence the development of areas in the vicinity of universities. Frequently, these members of the faculty locate their off-campus offices near the campus to reduce travel time. Many architectural, business consulting, engineering, legal, and medical

offices are located near university campuses for this reason.

Faculty members in disciplines that provide consulting services to business and industry can influence surrounding development. If there are many such faculty members, there may be a demand for off-campus office space or business or industrial firms may be attracted to the university environs.

The income level of faculty members influences their choices of housing. Many faculty members who desire to live near the campus cannot afford to if it is surrounded by unusually expensive housing.

Non-Academic Personnel Characteristics. Non-academic personnel have only a minor influence on land use surrounding universities. Certain groups of non-academic personnel--single clerical workers, nurses, and others--desire to live near the university. They can afford medium to high priced housing because they usually share apartments.

Administrative Policies

The administrative policies relating to (1) housing, (2) on-campus commercial facilities, (3) community use of university facilities, (4) control of automobiles, and (5) off-campus employment may influence the development of the area near a university.

Housing. Few universities attempt to provide on-campus housing for their entire populations. The majority of universities establish goals for the amount of housing they intend to provide on-campus. For example, the University of California has a policy of providing housing for only 25 per cent of the students and for none of the faculty and non-academic personnel.⁸

On-campus housing is provided primarily for single, undergraduate

students. Thirty-one per cent of undergraduate students and 37 per cent of single students live on-campus. This compares with 11 per cent of graduate students and only 6 per cent of married students.⁹ Few universities provide housing for faculty and non-academic personnel. Since 1950, only 43 universities have applied to the College Housing Loan Program for funds to construct faculty housing.¹⁰

Policies governing fraternities and sororities influence development in the vicinity of universities. Fraternity and sorority housing represents about 15 per cent of all university housing. Most universities permit fraternities and sororities and allow them to operate off-campus housing; when this is true, fraternities and sororities try to locate in the vicinity of the campus. Some universities assist fraternities and sororities in acquiring land and financing the construction of housing; others prohibit fraternities or require them to be housed in dormitories.

Most universities have housing offices that maintain a listing of available housing. Some universities inspect and recommend satisfactory housing to students and faculty; this encourages property owners to repair their houses so that they can rent apartments and rooms to students. Universities generally require that off-campus student housing, especially for girls, operate under the university housing regulations.

On-Campus Commercial Facilities. Most universities provide some on-campus commercial facilities which influence the amount and type of facilities located near the university. Usually on-campus facilities are not provided unless local merchants fail to maintain satisfactory off-campus facilities. On-campus commercial facilities vary from book stores

or coffee shops to a wide range of convenience shopping facilities. The Yale Co-operative sells sporting goods, clothing, records and books. Emory University has a university-operated laundry and dry cleaning establishment on-campus. The University of Wisconsin's student union has a tap room. The ground floors of dormitories at Wake Forest University are leased to a variety of merchants.

Community Use of University Facilities. Many universities have extensive libraries and expensive or unique equipment such as computers, testing facilities, particle accelerators, and atomic reactors to support their research activities. To promote the maximum use of this equipment, some universities encourage off-campus firms to make use of it. This provides part-time employment for students and an additional source of income for the university. Some universities establish computer centers, testing facilities, and the like to encourage research-oriented uses to locate near their campuses.

Control of Automobiles. University regulations controlling the use of automobiles influence land use in the vicinity of the campus. Most universities provide parking, but do not attempt to meet the on-campus parking needs of their entire population. The automobiles that are forced to park on the surrounding streets have a blighting influence on areas near the campus. Some universities discourage students from using automobiles near the campus.

Off-Campus Employment. Policies controlling off-campus employment of faculty and students can influence the development of areas near the campus. Faculty members providing consulting services may need office space near the campus. Various types of businesses that make frequent

use of consulting services or need the special skills of students are attracted to the vicinity of a university that encourages faculty and graduate students to work part-time.

Community Factors

Community factors influential in shaping the university's environment include: (1) surrounding land use, (2) community facilities, and (3) regulations.

Surrounding Land Use

The type of land use and the property values in its environs modify a university's influence on adjacent development.

Type of Land Use. Many land uses are relatively permanent and resist change. Downtown universities frequently face this problem. Public housing projects, cemeteries, public buildings, and expressways tend to prevent university-related facilities from locating near the campus. The State Capitol and state office complex which occupy several blocks adjacent to the University of South Carolina at Columbia are illustrative of this point.

On the other hand, when vacant or undeveloped land is available university-related facilities locate near the campus. Some universities own excess land that can be made available for related uses. The gift of a 21-acre parcel of land from Emory University encouraged the Communicable Disease Center to locate near its campus. The unusually large (10,000 acres) campus of Stanford University has provided sites for several research and development firms.

In some cases, existing development determines the location of a

new university. New York University located its new Graduate School of Business Administration in the heart of the city's financial district. The school meets the needs of the persons employed in the Wall Street area for graduate study. The possibility of recruiting part-time instructors from the financial houses of Wall Street was another reason for choosing this location.¹¹

Property Values. The property values surrounding the campus influence the type of facilities that locate nearby. Expensive unrelated uses cannot be easily replaced by university-related uses. Inexpensive property that is vacant or used for single-family housing can be replaced by higher-value, university-oriented uses. High property values result in more intensive types of university-related use, i.e., high rise instead of garden apartments.

Community Facilities

Community facilities, especially schools, recreation, and off-street parking located in the university environs, influence surrounding land use. Their primary influence is upon the type of residential development.

Many persons, especially the university population, desire to live where their children can attend outstanding schools. An improvement in the quality of the elementary and secondary schools in the university environs attracts faculty members and other medium to high income persons to the residential areas near the campus.

Certain types of educational facilities such as schools for the gifted or the physically handicapped could be located in the university environs. The university is usually centrally located and easily acces-

sible. Both types of schools would benefit a university's educational training program. Many gifted children have parents who are associated with universities.

Most universities do not provide recreational facilities for all segments of their population. Passive facilities for picnicking, hiking, boating, and the like usually cannot be provided on-campus. In order to satisfy the university population's recreational desires, community recreational facilities are needed to supplement university recreational facilities. A coordinated system of university and community recreational facilities in the university environs would improve the quality of recreation and influence surrounding land use. Additional community recreational facilities would make the university environs a more desirable place to live.

Many communities provide off-street parking to remove automobiles from the streets near the campus. If these facilities are located so as not to encourage large volumes of traffic in residential areas, these areas become more desirable residential neighborhoods. The Philadelphia Parking Authority provides much of the parking needed by the University of Pennsylvania. The Authority operates its facilities on a self-sustaining basis.¹²

Regulations

Three types of regulations influence the university's impact on adjacent development: (1) zoning ordinances, (2) housing codes, and (3) deed restrictions.

Zoning ordinances regulate the type of land use permitted in the university environs. In many cases, the zoning districts applied to the

university environs are based upon the existing land use pattern. Zoning of this type often prevents many types of university-related facilities from locating near the campus. On the other hand, zoning districts that permit university related land uses encourage this type of development.

The enforcement of housing codes in university environs influences land use. Because of the need for university-related housing near the campus, enforcement officials sometimes disregard housing code violations. A strong enforcement program geared to eliminating overcrowding often reduces the number of housing units and increases the cost of housing. In some cases, enforcement of housing codes requires the removal of obsolete buildings that may be replaced by university-related facilities.

Deed restrictions sometimes limit the use of land to single-family houses and thereby prevent other university-related facilities from locating near the campus.

CHAPTER III

UNIVERSITY-RELATED LAND USE

This chapter discusses the relationship of academic institutions to four specific types of land use. The types of land use considered are: (1) housing, (2) public and semi-public facilities, (3) commercial facilities, and (4) research facilities.

Housing

Two university-oriented groups desire to live within the university environs. The first group consists of various segments of the university population which have not been provided with or do not wish on-campus housing. The second group includes persons not part of the university population who find living near the university and university-related facilities desirable.

Three aspects of housing in the university environs are discussed: (1) the market for housing, (2) the supply of housing, and (3) planning for housing.

Market for Housing

The portion of a university's population seeking housing in the environs is influenced by the university's housing program. Most universities reserve the majority of their housing units for single undergraduate students. Married and graduate students, faculty members, and non-academic personnel who desire to live near the campus must find private housing in the university environs.

A significant portion of the university's population would like to live near the campus if adequate housing were available. A survey of 7,200 members (about 40 per cent) of the combined Western Reserve University and Case Institute of Technology populations indicated that about one-half of these persons "would prefer to live within the University Circle area if enough good accommodations (efficiency and garden apartments) were available." Of the 3400 people who stated they would prefer to live within the area, 2000 were presently living outside of the University Circle area. However, the study indicated that less than one-half of those who prefer to live within the area could afford housing near the campus.¹³

Concerts, lectures, and other cultural activities occur frequently on or in the vicinity of university campuses. Many people live near a university in order to take advantage of these cultural activities. The number of people desiring to live near a university for this reason depends upon the types of cultural activities available to non-university personnel.

The convenience of restaurants and shopping facilities in addition to educational and cultural activities attract many older persons to the university environs. "Retired persons find living in the vicinity of the University of Pittsburgh to be stimulating and convenient."¹⁴ Although the elderly and the culturally-oriented are not directly related to the university, they add a desirable heterogeneous quality to the university environs.

Supply of Housing

The housing supply in the vicinity of the University of Pittsburgh

illustrates some characteristics of housing in the vicinity of large universities. A survey of the area revealed that 63 per cent of the 7,650 of the dwelling units are in multi-family structures. Nearly two-thirds of these structures contain ten or more apartments. Seventy-seven per cent of the dwelling units in the university environs are rental units. Only 40 per cent of the units are in sound condition. Most of the sound structures are new multi-family buildings and single-family, owner-occupied homes. The unsound structures consist of row housing, three-story walk-ups, and large, old homes converted into apartments and rooming houses. The cost of housing in the university environs was substantially higher than for the city as a whole. Sound housing rented for \$150 to \$650 per month, well out of the range of most of the university population. Unsound housing rented for \$90 to \$120 per month.¹⁵

As is true in Pittsburgh, the demand for housing in the environs of most universities frequently exceeds the supply. The result is overcrowding and higher rents. In many cases, substandard or public housing is the only housing available near the campus at prices students can afford. Housing for faculty members and non-academic personnel is seldom adequate.

Planning for Housing

Planning for housing in the vicinity of universities should be carried out in two steps. First, the demand for housing should be established. Second, a program to meet the demand for housing should be developed.

Demand for Housing. The demand for housing in the university environs is created by two groups: (1) those who are associated with the

university who are not provided adequate on-campus housing (married and graduate students, faculty members, and non-academic personnel, and (2) those who find the university environs a desirable place to live (the elderly and the culturally-oriented).

Some of the persons who desire to live near the university cannot afford private housing. These are principally married students with children. They should be given consideration in the community's public housing program.

The persons who can afford private housing create a demand for a variety of housing types. Single students who are not provided on-campus housing or who do not desire to live on-campus can be accommodated in relatively dense apartments or in rooming or boarding houses. Married students with children create a demand for low-rent apartments such as apartments converted from old houses and garage apartments. Married students with working wives, graduate students, and instructors create a demand for medium-priced apartments. Faculty and non-academic personnel with children need larger apartments, town houses, or single-family homes. Faculty members whose households no longer include children may be attracted from their large, suburban homes to apartments near the campus. The housing demands of the elderly and the culturally-oriented vary from basement Bohemian apartments to luxury high-rise apartments.

Meeting the Demand. The existing housing supply should be analyzed in order to determine its ability to meet the demand for housing. It should be determined what housing not presently occupied by university-oriented persons could be converted for use by these groups.

Often large, old homes can be rehabilitated and converted into apartments for university-oriented persons. In some cases, this rehabilitation or conversion of existing housing will be sufficient to meet the demand for housing. In other cases, new housing is needed. When new housing is required, the number and type of units to meet the demand should be established.

Communities and private developers can meet the demand for off-campus housing for the university's population in a variety of ways. Some communities permit students who cannot afford adequate private housing to live in public housing projects. Private developers build apartment projects, subdivisions and mobile home parks near university campuses to house certain segments of university's population.

Recently, private developers have built dormitories in the vicinity of two Georgia universities. Oglethorpe House provides living accommodations for 500 single men at the University of Georgia, while Knight Village houses 726 single students at Georgia Southern College. The dormitories are operated by the developers under the university's housing regulations. The developer of Oglethorpe House has built a number of similar student housing facilities.¹⁶

The relationship of the location of additional housing to the surrounding neighborhood and to the campus should be studied. Housing for single students should be near the academic core, dormitories, and recreational facilities. This will permit the students living off-campus to have access to the same facilities as the students who are living in university housing. Housing for married students, faculty, non-academic personnel should be near commercial facilities, schools, and

other community facilities. Housing for the elderly and the culturally-oriented should be near cultural facilities, the academic core, and commercial facilities.

Public and Semi-Public Facilities

Public and semi-public facilities which are frequently located in the vicinity of universities include: educational, cultural, medical, church and other semi-public facilities. Easy access, the prestige associated with a location near a university, and the availability of other public and private facilities are factors that attract these facilities to the university environs.

The community should review all of its existing and proposed public facilities to determine which facilities could be appropriately located in the vicinity of the university. Particular emphasis should be given to those facilities which are in need of relocation or are scheduled to be built in the near future.

Educational Facilities

Academic institutions are frequently located near large universities. Hebrew Union College, which is near the University of Cincinnati campus, permits its students to take credit courses on the Cincinnati campus. Carnegie Institute of Technology, Mount Mercy College, and the Winchester-Thurston School are all in the vicinity of the University of Pittsburgh. The DeKalb County Community College has become the nucleus of a county educational center. A technical-vocational school, an elementary school, a junior and senior high school, and the board of education's administration building are located nearby.

Other educational facilities frequently are located in the vicinity of universities. At the University of Pittsburgh these include the Western Pennsylvania School for the Blind and the Pittsburgh Institute of Mortuary Science. The Ohio College of Chiropractic, the Cleveland Institute of Art, the Cleveland Institute of Music, and the Music School Settlement are located near Western Reserve University.

Cultural Facilities

The potential part-time use of university facilities, participation by the university population, and convenient access are factors that attract cultural facilities to the university environs. The University Circle area of Cleveland, which includes Western Reserve University and the Case Institute of Technology, is the cultural center of the city. An art museum, a natural history museum, formal gardens, a symphony hall, and a branch of the public library are located within University Circle. Flint College, the University of Pittsburgh, and Butler University are all parts of their city's cultural district.

Medical Facilities

Medical facilities and other hospitals are attracted to the vicinity of a medical university. The National Health Association, the Center for Alcoholism, the Hearing and Speech Center, the Psychiatric Nursery, the Benjamin Rose Institute (medical aid to aged), the Academy of Medicine, the Heart Society, and the Allen Memorial Medical Library are located near Western Reserve University and the University Hospital in Cleveland, Ohio. Seven hospitals with more than 2000 beds are located in the vicinity of the University of Pittsburgh's medical college.

Churches

Churches located near university campuses serve both the university population and persons living in surrounding neighborhoods. Convenient access and an easily identifiable, prestigious location are the main reasons why churches desire to be near university campuses. Eight churches are located near the University of Cincinnati while 15 are near the University of Pittsburgh. Frequently, liberal churches such as the Unitarian Church locate near universities.

Other Semi-Public Facilities

Other semi-public uses locate near universities. The Carnegie Institute and Library, the Mellon Institute, the Historical Society of Western Pennsylvania, the United Jewish Federation, the Pittsburgh Athletic Association, and the Allegheny County Soldiers and Sailors Hall are located in the vicinity of the University of Pittsburgh.

Commercial Facilities

The relationship of commercial facilities located in the university environs to the university is discussed in two parts: (1) the market for commercial facilities and (2) existing commercial facilities.

Market for Commercial Facilities

The market for commercial facilities is made up principally of the university population. The university population creates a market for various types of commercial facilities: convenience shopping facilities, hotels and motels, and professional offices.

Convenience Shopping Facilities. A study of the Massachusetts Institute of Technology indicated that the university population has sub-

stantial buying power. The study revealed that the average M.I.T. undergraduate student has an annual disposable income, after tuition, room, and board, of \$2500. Graduate students have an annual disposable income of \$3000, while the disposable income of faculty members varied from \$5100 to \$9000.¹⁷

The portion of disposable income spent in the vicinity of the campus is dependent upon several factors. For students, the most significant factors are the location and type of residence and the status of enrollment. A part-time student will spend appreciably less in off-campus outlets than a full-time student. A full-time student living at home will not spend as much in off-campus commercial areas as a full-time student living on-campus, particularly for food, laundry, and dry cleaning.¹⁸

Additional factors that influence the portion of the university population's disposable income spent in the vicinity of the campus include: the type, variety, and amount of nearby stores; the relation of off-campus shopping areas to dormitories and to the academic core; the location and accessibility of larger shopping areas, especially the downtown shopping area; and the number and type of on-campus shopping facilities.

A study of the spending habits of dormitory students was conducted at the University of Bridgeport. The study indicated that the average dormitory student spent about \$35 per month in off-campus commercial areas. Almost the entire sum was spent in the vicinity of the campus for food, laundry, and personal services. Higher priced, durable items such as cameras, record players, typewriters, and the like, were

purchased before coming to school or during vacations.¹⁹

Hotels and Motels. The university population and university activities create a demand for overnight accommodations in the vicinity of the campus. Hotels and motels provide facilities for visiting parents, guest lecturers, sporting spectators and persons attending short courses or conferences. Each out-of-town student generates approximately two visits to the campus per year.²⁰

Professional Offices. Professional offices are frequently located in the vicinity of academic institutions. These offices are attracted to the university environs for a variety of reasons. Faculty members who teach only part-time frequently locate their offices in the vicinity of the university to eliminate costly travel time. Some smaller offices have erratic work schedules and are dependent upon part-time, student labor. Offices that make frequent use of the university's library reference materials, or research facilities often locate near the campus. The prestige associated with a university address also attracts some professional offices to the vicinity of the campus.

Medical offices for doctors, dentists, and medical specialists locate near medical universities and their associated hospitals. Public health centers and clinics are also located in the vicinity of medical universities. Most of the teaching faculty at medical universities maintain private practices. Proximity of location to a medical university or to a major hospital is important to most physicians when choosing a site for their private office.

Existing Commercial Facilities

Four types of existing commercial facilities frequently found near

universities are discussed. These include: (1) convenience shopping facilities, (2) medical-oriented facilities, (3) hotels and motels, and (4) professional offices.

Convenience Shopping Facilities. Convenience shopping areas in the vicinity of university campuses have several characteristics in common. The majority have a similar mixture of stores which serve both the university population and the surrounding neighborhood. Many are located in deteriorating structures which are inadequate for their present use.

The results of a survey of off-campus commercial facilities at the University of Pennsylvania are typical of most university shopping areas. Eating and drinking establishments and laundry and dry cleaning establishments accounted for one-half of all commercial shops in the areas surrounding the campus. Clothing, books, drug, and food stores were the next most frequently-noted stores. The University of Pennsylvania study recommended that a new commercial area be built to replace deteriorated existing facilities.²¹ Table 2 summarizes and compares the type of commercial facilities located in the vicinity of the University of Pennsylvania and three other universities.

Medical-Oriented Facilities. Commercial development in the vicinity of medical colleges is strongly influenced by the presence of affiliated or nearby hospitals. A previous thesis at the Georgia Institute of Technology, *Planned Medical Districts* by Robert H. Doyle,²² studied land use located in the vicinity of hospitals. The commercial uses that Mr. Doyle described in the vicinity of hospitals are also found in the vicinity of medical universities. These include: pharmacies, florists, gift shops, uniform shops, equipment rental establishments (wheelchairs,

crutches, hospital beds), and medical supply shops.

Table 2. Commercial Facilities in the Vicinity
of Four Universities

Type of Store	Georgia Tech	Emory University	University of Georgia	University of Pennsylvania
Eating and Drinking	8	8	11	24
Laundry or Dry Cleaning	5	4	12	23
Barber and Beauty	4	5	6	7
Food	2	1	3	6
Clothing	2	2	9	7
Book	1		3	3
Jewelry	1	1		3
Drug		1	3	7
Florist		1	1	1
Tavern				5
Bank	1		3	
Gas Station	3	4	10	
Variety		1	2	
Recreation	2	2	2	1
Other*		3	4	5
TOTAL STORES	30	33	67	93

* Other stores include: camera (2), hardware (1), record (3), card and gift (2), travel agency (2), and shoe repair (2).

Hotels and Motels. Overnight accommodations are located in the vicinity of most large universities. Two hotels are located near the Western Reserve University-Case Institute of Technology complex in Cleveland, Ohio. The University of Pennsylvania is considering building and leasing a 300-room hotel adjacent to its campus.²³

Professional Offices. Office buildings are located in the vicinity of several universities, especially downtown universities. The new campus of the University of California at Irving is planned with its academic core adjacent to the town center. This was done so that office space would be available near the campus.²⁴ A large insurance company (Hartford) recently built an office building near a university (Georgia State College) with an outstanding insurance education program.

University-Related Research Facilities

University-related research facilities are frequently located near multi-purpose and single-purpose universities with significant on-campus research programs. The relationship of research facilities to the university is discussed in two parts: (1) the amount and distribution of university research are reviewed and (2) existing university-related research facilities are studied.

University Research Programs

The university's research program is the principal factor responsible for attracting related facilities to the vicinity of the campus. The amount spent on university research has risen from \$40 million in 1940 to \$2 billion in 1964.²⁵ In 1940, \$1 out of every \$25 spent on higher education went to research. By 1960, this ratio had jumped to \$1 out of every \$5. Most of the increase has been in Federally-sponsored programs. In 1964, the Federal Government supplied 75 per cent of campus research funds.²⁶

Research is not conducted in the same amount by every academic institution. Approximately 90 per cent of Federal academic research

funds go to 100 universities, with 40 per cent concentrated in 10 academic institutions.²⁷ The National Science Foundation has estimated that about 700 of the 2100 existing academic institutions have some research potential. In the future, Federal agencies can be expected to encourage a greater number of academic institutions to develop major research programs.²⁸

Research Facilities

The majority of university-related research facilities are located in the vicinity of multi-purpose or single-purpose universities. Some of the research facilities have "spunoff" from the university while others have been attracted to a university-sponsored research park.

Technology Square, a complex of three research and office buildings, has recently been completed adjacent to the Massachusetts Institute of Technology campus. The building's 200,000 square feet of floor area has been leased to 14 research-oriented firms.²⁹ The National Aeronautics and Space Administration has recently selected a site for a \$50 million electronics research center in Cambridge. The site was chosen primarily because of its proximity to the M.I.T. campus.³⁰

Non-university medical research facilities are frequently attracted to the vicinity of a medical university. A regional Communicable Disease Center is located near the Emory University campus. The Taft Sanitary Engineering center recently selected a site near the medical college of the University of Cincinnati.

Academic Spinoff. At some universities, professors, researchers, and graduate students are encouraged to form business firms to capitalize on products or unique opportunities originating with the university's

research program. These firms are said to "spinoff" from the university. For spinoffs to occur, it is necessary that university research be related to new growth industry. Hewlett-Packard Co. and High Voltage Engineering Co. are two of several successful firms that began in this manner. Twelve of the 24 scientifically-oriented firms in Ann Arbor were spunoff from the University of Michigan.³¹

During the early period of development, a location in the vicinity of the campus is desirable for a spinoff firm. Faculty members usually need to continue teaching until their businesses become successful. It is also desirable to keep the faculty members near the university. The mortality rate of new enterprises is high during the first few years of operation. Many of the faculty members active during the formation of these firms return to the university. Only 10 per cent of spinoff firms survive in their original form; 50 per cent go out of existence and 40 per cent are absorbed by other firms.³²

Research Parks. Recently, some universities have sponsored research parks. The first university research park was sponsored by Stanford University in 1951. Research parks now number about 80 and more than half of these have been established since 1962. The number of parks located near major academic centers totals almost 30. All of these academic institutions offer graduate training and are either technical institutions or have school of engineering.³³

Most universities attempt to locate the research park as near to the campus as possible in order to receive the maximum advantage from the park. Stanford's research park occupies 700 acres on the university's large 10,000 acre campus. The Oakland Corporation of Pittsburgh will

complete the first stage of its \$250 million Panther Hollow research center in 1966. Panther Hollow is adjacent to the University of Pittsburgh and the Carnegie Institute of Technology campuses. The research complex will include a highly sophisticated instrumentation center, a nuclear reactor, and a major computer center and data bank for use by its tenants.³⁴

A location near the campus increases consulting opportunities for faculty members and attracts graduate students to the university. A research park also acts as a stimulus for professional conferences, seminars, symposia, and short courses; it further provides a source of specialized guest lecturers and provides employment opportunities for students while in residence and after graduation.³⁵

CHAPTER IV

SURVEY OF DEVELOPMENT AT FOUR SELECTED UNIVERSITIES

A detailed analysis is presented of the relationship of four selected universities to the land use surrounding their campuses. These universities are: (1) University of Georgia; (2) Emory University; (3) Georgia Institute of Technology; and (4) Georgia State College.

The universities were selected because of the availability of information, their educational programs, and their location. The four universities include a multi-purpose university, a liberal arts university with a medical school, a technological university, and a liberal arts and business college. Three of the four universities are located in the Atlanta, Georgia, metropolitan area. The fourth, the University of Georgia, is located in a smaller city, Athens, Georgia.

Of the four, Emory University has the smallest enrollment and is the only institution not a part of the State University System of Georgia. None of the universities selected is exceptionally large. Enrollment varies from 4,300 at Emory University to slightly over 11,000 at the University of Georgia. Table 3 on the following page presents statistical data about the population of each of the four universities.

The type and amount of commercial facilities located in the vicinity of the University of Georgia, Emory University, and the Georgia Institute of Technology are presented in Table 2, page 28.

Table 3. Components of University Population for Four Selected Universities and for the National Average

	University of Georgia	Per Cent	Emory University	Per Cent	Georgia Tech	Per Cent	Georgia State	Per Cent	National Average
TOTAL STUDENTS	11,094	100	4,319	100	7,102	100	6,078	100	100%
Male	6,975	63	2,970	68	7,031	99	3,547	58	68%
Female	4,119	37	1,349	32	71	1	2,531	42	32%
Undergraduate	9,893	88	2,583	60	6,236	86	5,712	94	90%
Graduate	1,101	12	1,736	40	886	14	366	6	10%
Single	8,652	79	3,317	76	5,554	75	4,846	63	80%
Married	2,442	21	1,002	24	1,548	25	2,212	37	20%
Full-Time	9,230	83	3,992	92	7,102	100	3,124	53	
Part-Time	1,864	17	327	8		0	2,934	47	
FACULTY MEMBERS	773		1,320		579		325		
Full-Time	590		565		352		219		
Part-Time	183		755*		227		106		
NON-ACADEMIC	2,468		2,186		1,526		587		
TOTAL POPULATION	14,337		7,825		9,207		6,970		

* This figure includes 640 voluntary faculty.

SOURCE: Registrar's Office of each university.

University of Georgia

The University of Georgia is a rapidly growing multi-purpose university located on a large (3,500 acre) campus in Athens, Georgia. The University has doubled its enrollment in the past ten years to 11,094 students and anticipates an enrollment of 20,000 students by 1970. Athens with an estimated 1965 population of 60,000 is not "dominated" by the University; however, it is the major social and economic force in the city.

Of the 11,094 students enrolled during the 1964-65 academic year, about 10 per cent were in graduate programs. The university program with the largest enrollment is the Arts and Science program with 3,500 students. Other educational programs and their enrollments include: Business Administration (1,858), Forestry (1,445), Agriculture (574), Journalism (494), Fine Arts (412), Pharmacy (325), and Home Economics (312).

The University of Georgia's teaching faculty numbers 773, which includes 183 part-time members. In addition to the faculty, the University employs 2,468 non-academic personnel.

University Facilities

The University provides on-campus housing for only 3,300 persons-- 3,000 dormitory rooms for single students and 300 apartments for married students and faculty. An apartment project for married students, faculty members, and non-academic personnel is being built on the University's land reserve. In addition, the University gives financial assistance to fraternities and sororities on the construction of chapter houses off-campus.

The University of Georgia operates a Continuing Education Center

on the campus. During the 1963-64 academic year, over 50,000 persons attended the 215 conferences and other educational activities held at the Center. There are overnight accommodations available at the Center for persons who use its facilities. A State educational television station, WGTV, operates from the Continuing Education Center.

A multi-million dollar Graduate Studies Research Center is being developed on-campus. The Center will contain a research library, computer center, and facilities for bio-chemistry and mathematics. The Research Center will strengthen the University's position in agricultural, forestry, and bio-chemical research.³⁶

University Housing Policies

The University lends fraternities and sororities up to 50 per cent of the construction cost of their housing and holds title to the property. Fraternities and sororities must operate their housing according to university housing regulations. The 24 fraternities and 17 sororities located near the campus provide housing for about 1,300 students.³⁷

The University also has an off-campus housing office that conducts, with the City Fire Department, a joint inspection program of all off-campus student housing. Property owners are encouraged to improve their housing to meet minimum standards established by the University. Students are discouraged from living in housing that does not meet these minimum standards. This program is expected to reduce overcrowding and improve the quality of residential areas near the campus.³⁸

Surrounding Land Use

The area surrounding the University of Georgia campus has been divided into six study areas. The location of these areas in relation

to the campus is illustrated in Figure 1.

Study Area 1. This area is a mixed residential neighborhood that has become the principal off-campus student housing area. Large, old homes are located along Milledge Avenue and Lumpkin Street. Most of these have been converted into fraternity and sorority houses or into headquarters for religious organizations and professional societies. Some are used as rooming and boarding houses. A few fraternities, sororities, religious organizations, and professional organizations have built new housing in this area.

Oglethorpe House, a privately-owned student dormitory, is located adjacent to university housing facilities. The builder of Oglethorpe House purchased the tract of land from private interests. The first 500-unit building, which was not completed until the day school began, was completely rented five weeks before this date. A second 500-unit facility is scheduled to be built next year by the developer.³⁹

Several new apartment projects which provide housing for married and graduate students and faculty members have been constructed in the area between Milledge Avenue and Lumpkin Street. Some married students live in the two public housing projects which are located in the northwest section of the area. The portion of the area nearest Broad Street is characterized by deteriorated housing and hilly terrain and has no relationship to the university.

In addition to housing, two commercial areas, a motel, and small office buildings are located in this study area. The commercial area along Lumpkin Street is small and contains only university-oriented shops and is principally for walk-in customers. The commercial area

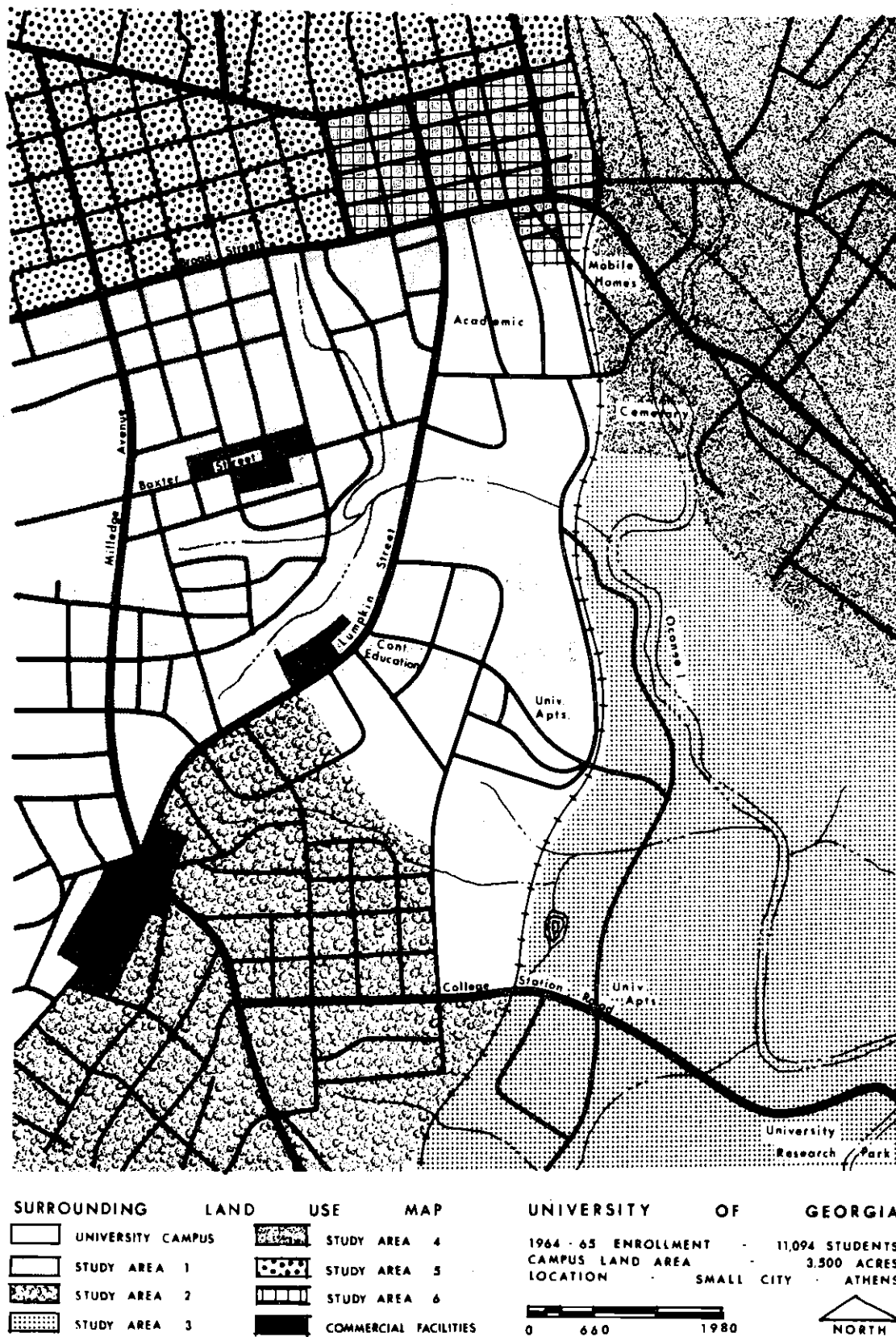


Figure 1. Surrounding Land Area Map, University of Georgia.

along Baxter Street is larger, contains a greater variety of stores, and is automobile oriented. The motel contains more than 100 units. It is adjacent to the campus and near the central business district. Small office buildings are scattered throughout the area. All of these facilities receive a significant portion of their business from the university population or persons visiting the campus.

Study Area 2. This area contains primarily single-family housing. Most of the homes are owner-occupied and were built within the last 20 years. Many faculty members and non-academic personnel live in this area.

A large convenience shopping area is located south of the intersection of Milledge Avenue and Lumpkin Street. The stores in this area serve both the university population and the residents of surrounding areas. The principal types of stores in this area are food stores, clothing stores, laundry and dry cleaning establishments, and barber and beauty shops.

Study Area 3. This area consists of the University land reserve and adjacent undeveloped areas. The major portion of the University's land reserve is used for agricultural research. The University has permitted some fraternity houses to be built on the land reserve and has a 400-unit apartment project for married students and faculty members under construction there.

The University has designated 50 acres of its land reserve for the development of a research park. To date, three parcels have been transferred to the Federal Government for research laboratories. A poultry laboratory and a water research laboratory have been completed, and a \$10

million regional food research laboratory for the Department of Agriculture is under construction. The U. S. Forestry Service has a laboratory in this area a short distance from the research park.

The Athens Industrial Board has acquired a 100-acre tract of land adjacent to the University Research Park. The University of Georgia and the Industrial Development Board are developing both areas as a joint project. The Industrial Development Board's land is principally for private firms who cannot purchase university land.⁴⁰

Study Area 4. Except for a mobile home park and apartment projects under construction along the river on three hilly sites that have convenient access to the campus, the uses located in this area are not related to the University. The mobile home park was built after World War II and is used by students needing low-cost housing. Unrelated uses in the area include small old homes, industrial uses, warehousing, and a cemetery.

Study Area 5. The housing in this area is not related to the University. Much of it is deteriorated and an urban renewal project has been started in a portion of this area. A large motel was recently completed in the renewal project. The motel provides overnight accommodations for many of the persons visiting the University.

Study Area 6. This study area is the central business district of Athens. In a small city like Athens in which the University is the major economic force, most of the facilities located in the central business district are related to the University. Some commercial uses that have located near the campus include: restaurants, movie theaters, a travel agency, and out-of-town news shops. The Department of Agri-

culture occupies an old post office building in downtown Athens in order to be close to the College of Agriculture.

Emory University

Emory University is a Methodist-owned institution located on a spacious campus in suburban Atlanta, Georgia. The original 500-acre site was donated to the Methodist Church for the purpose of establishing a seminary and a university. The site was on the fringe of urban development when it was donated to the Church. After the University was established, the surrounding area was developed into a high-quality residential neighborhood.

During the 1964-65 academic year, Emory had a total enrollment of 4,319 students. A significant portion of the students (40 per cent) were enrolled in graduate programs. The majority of students were enrolled in liberal arts programs--2,074 in Emory College and 537 in Graduate Arts and Science. Other educational programs and their enrollments include: Theology (375); Dentistry (298); Medicine (289); Law (285); Nursing (160); and Business (123).

Emory's teaching faculty numbers 680 members. In addition, some 640 persons teach occasional classes on a voluntary basis. Most of these "voluntary faculty" are associated with various institutions in the vicinity of the campus and teach in the School of Medicine. The University employs 2,186 non-academic personnel.

Ninety per cent of Emory's students are from out-of-town and live either on-campus or within the community. The remaining 10 per cent live at home and commute. The University requires that all out-of-town single,

undergraduate female and freshman male students live in University housing.

University Facilities

Emory provides on-campus housing for about one-half of its out-of-town students. On-campus housing includes: 1,694 dormitory rooms for single students; 150 rooms for graduate students; and 13 fraternity houses. Fraternity houses provide living accommodations for 351 single male students. University housing for married students, faculty members, and non-academic personnel is located off-campus.

Fraternities are required to locate on-campus and must agree to Emory's fraternity housing plan. Under this plan, the fraternity donates 60 per cent of the cost of the building and land to the University before the building is started. The remaining 40 per cent of the cost is paid to the University over a period of 20 years. Title to the fraternity house and land is held by Emory even after the building is "paid off." Sororities are not permitted to have chapter houses.

On-campus commercial facilities include a cafeteria, a book store, and a laundry and dry cleaning establishment. A post office is also located on-campus.

Emory operates a 359-bed hospital and a clinic on the campus. The facilities are needed to train students in the Medical and Nursing Schools.

On-campus Church-related facilities include the Glenn Memorial Church and a primary school. Glenn Memorial was originally a university auditorium and community church. It was recently remodeled and is now used solely for worship by students and members of the surrounding com-

munity.⁴²

Surrounding Land Use

Three areas, each of which consists of different types of land use, are discussed. The location of these areas is shown in Figure 2.

Study Area 1. This area is part of the Druid Hills section, which for years has been one of Atlanta's prestige suburbs. The area was developed a few years after the University was established in 1905 by the Candler family of Coca-Cola fame who donated the original campus site to the Church.

Several of the original residents still live in the area. Many of these persons no longer need as much living space as they did at one time. Some of the homes have been remodeled to make rooms or apartments available for renting. Other homes in the area have garage apartments or former servants' quarters that are rented to students.

Many of the residents of the area need the added income they receive from renting rooms, apartments, or former servants' quarters in order to maintain their properties. Other residents of the area resent this action since they feel that these changes might lower their property values. Several conflicts have occurred within the area over this issue.

The housing of this area provides rooms for single students and inexpensive garage apartments for married students. According to realtors familiar with this area, about 25 to 40 per cent of the property owners furnish off-campus housing to students. Some faculty members, non-academic personnel, and physicians associated with the School of Medicine live in this area.⁴³

There is a multi-family housing development located adjacent to

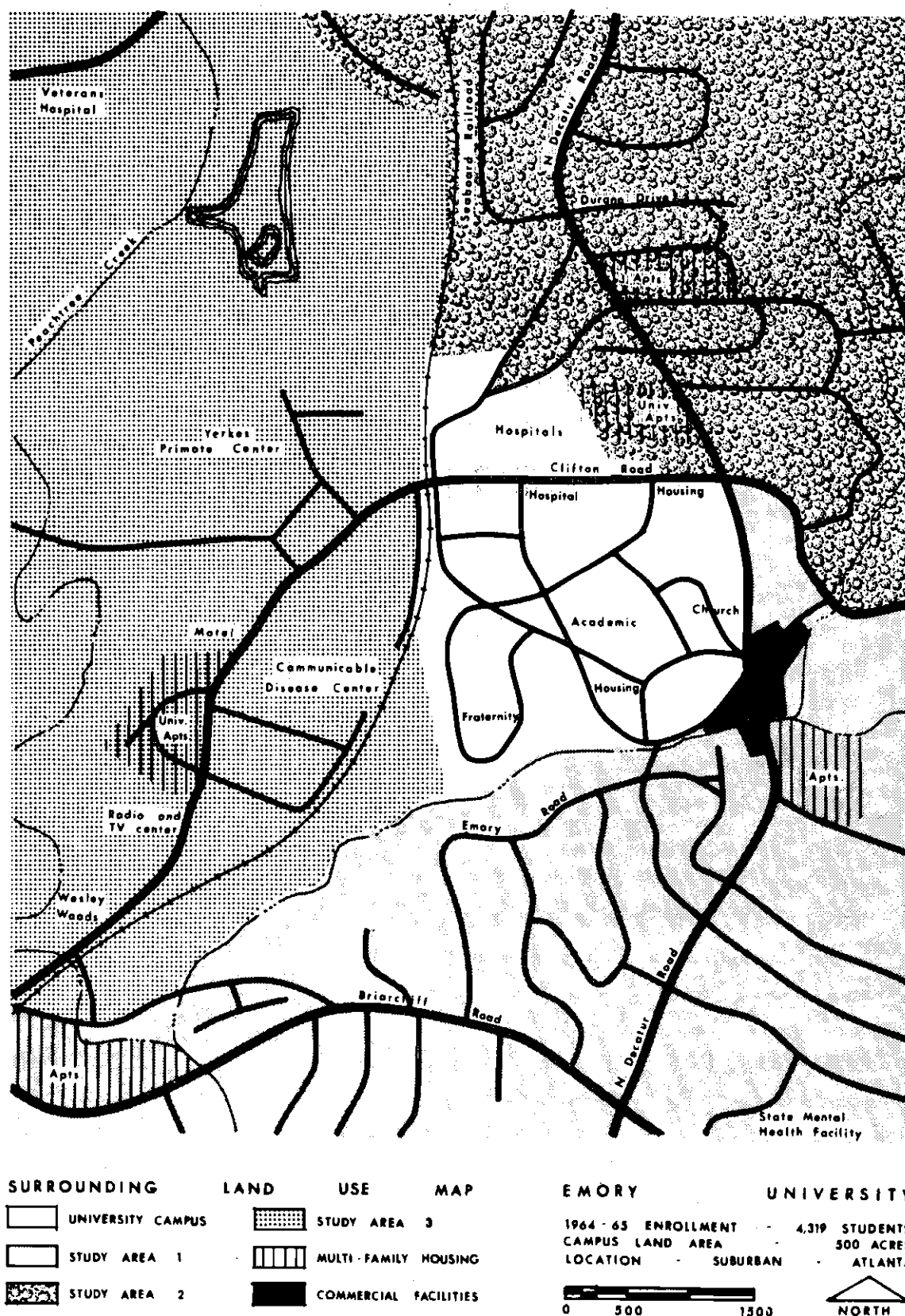


Figure 2. Surrounding Land Area Map, Emory University.

the commercial area, and another on the rugged terrain at the extreme western edge of the study area. Both developments have moderately-priced apartments and are on direct routes to the campus. Many married students with working wives, medical staff of the hospitals, and other persons associated with institutions near Emory live in these apartments.

The only convenience shopping area in the vicinity of Emory was located at its present site when the area was subdivided. It serves both the University and the surrounding community. Over one-half of the stores are eating establishments, laundry and dry cleaning establishments, or barber and beauty shops. These stores are frequently used by the student population.

The State of Georgia recently completed a \$15 million psychiatric training center within this area about one-half mile from the Emory campus. The primary reason for choosing this location was the close physical relationship to Emory's Department of Psychology and School of Medicine.⁴⁴

Study Area 2. This area consists essentially of moderately-priced, single-family housing with a few larger homes scattered throughout the neighborhood. Most of the small single-family homes were built after World War II and are owner-occupied. Many faculty members and non-academic personnel have located in this area because of its proximity to the campus, its good schools, and its pleasant residential environment.

A privately-owned apartment project similar to those described in study area 1 is located along North Decatur Road. In addition, the University has built an apartment project in this study area for married

student housing.

Study Area 3. Study area 3 consists of the University's land reserve. Principally, Emory has used its land reserve to provide sites for other institutional uses that desired to locate near the campus.

Three hospitals (two private and one Federal) and the Communicable Disease Center have located in this area. The two private hospitals--Henrietta Eggleston and Elk's Aidmore--are for children. The third, a 580-bed Veterans Hospital, is under construction. Emory made land available to these hospitals so that they could locate near the University Hospital and Emory's School of Medicine. All three hospitals have a contractual relationship with the School of Medicine under which medical care, instruction, and other services are exchanged.

The U. S. Public Health Service recently purchased a 21-acre site from Emory for the construction of the Communicable Disease Center (CDC). When the physical plant of the CDC is completed, it will represent an investment of \$50 million. Faculty members and students engaged in disease research are allowed use of the CDC facilities. In return, appropriate facilities of Emory are available to CDC personnel.

A retirement community, Wesley Woods, is in this area. The project, which is sponsored by the Methodist Church, consists of two circular residence towers containing 202 apartments and a 160-bed health center for the elderly. The site was selected because of the identification with a church-sponsored university and the availability of land. Non-credit courses will be given by university personnel at Wesley Woods this fall. When special events occur on the campus, bus service is available from Wesley Woods to the campus.

The Protestant Radio and TV Center is located on a seven and one-half acre tract purchased from Emory. The Center selected a site near Emory for several reasons: the desire to be located in an academic environment; the availability of the land; the identification with religious leaders; and the potential use of Emory's personnel and facilities. The Center trains Emory's theological, medical, and law students in the techniques of radio and television. The educational television division of the State Department of Education maintains offices in the Protestant Radio and TV Center.⁴⁵

In addition, Emory has built a 202-unit apartment project for married students and faculty members on a portion of the reserve. The University-owned Yerkes Regional Primate Center has been moved to a site on the land reserve. The Primate Center is an important part of Emory's psychological, sociological, and medical research programs.

Several years ago, the University considered a portion of its land reserve surplus and sold sites to private developers for housing. At that time, housing appeared to be the most desirable land use for the university environs.

Recently, Emory has provided a site for a 114-unit motel to be built adjacent to the campus. The University felt that a motel was needed near its campus. A group of local investors was approached by the university. Emory sold the site to this group and the facility is now under construction. The Sheraton Corporation will operate the motel.⁴⁶

The motel represents the university's first attempt to attract related development other than institutions to the vicinity of the

campus. A policy of selling or leasing land to private developers who will build commercial facilities and office facilities related to the university is under consideration.

No medical-oriented commercial facilities, supply houses, or doctors' offices are located near the campus. Most of the area around the campus is either owned by the University or was developed for residences before the School of Medicine attained the prominence it enjoys today. The University has not chosen to build medical-oriented commercial facilities, medical supply houses, or doctors' offices near its campus. The residents of the area have effectively resisted any changes in zoning patterns to permit these facilities because they feel that lower property values would result.

Georgia Institute of Technology

The Georgia Institute of Technology (Georgia Tech) is a single-purpose technological university located on the fringe of downtown Atlanta. The campus is surrounded by mixed residential, commercial, and industrial (to some extent) uses. This basically engineering school has a significant research program. The Institute plans to double its enrollment during the next 15 years.

During the 1964-65 academic year, Georgia Tech had a total enrollment of 7,102 students. The educational programs at Georgia Tech in order of the size of their enrollments are: Electrical Engineering, Industrial Management, Mechanical Engineering, Aerospace, Architecture, Industrial Engineering, Civil Engineering, Chemical Engineering, Physics, Textile Engineering, and Engineering Mechanics. About 15 per cent of the

total number enrolled were in graduate programs.

Georgia Tech's teaching faculty numbers 579, of which 227 are part-time. In addition, the Institute employs about 1,500 non-academic personnel.

University Facilities

The Institute provides living accommodations for 3,017 persons. Dormitory facilities are provided for 2,769 single students on campus. There are 202 married students, 21 faculty members, and 25 non-academic personnel living in off-campus university-owned housing. On-campus commercial facilities are limited to eating facilities, a book store, a miscellaneous supplies store, and a barber shop.

The research functions of Georgia Tech are carried out by the semi-autonomous Engineering Experiment Station (EES). The EES conducts primarily "contract research." It has a computer center, a nuclear reactor, and other highly specialized equipment. During the 1963-64 academic year, it was engaged in 362 research projects. Its Industrial Development Division provides a variety of services to communities and industries throughout the state. Offices of the Industrial Development Division are located apart from the EES, but near the campus.

Georgia Tech's Department of Continuing Education offers short courses and sponsors conferences throughout the year. During the 1963-64 academic year, more than 1,000 persons attended the 61 short courses and 12 conferences.

A radio station, WGST, is located on the Georgia Tech campus. The station is licensed to Georgia Tech through the State Board of Regents and is operated as a profit making, entertainment station. WGST

promotes the interests of Georgia Tech and broadcasts its sporting events. Eight years ago, the station was moved from downtown Atlanta to the campus in order to provide physical identification with Georgia Tech.⁴⁷

Housing Survey

A housing study was conducted using the campus directory to find the proportion of various segments of the university population living in certain areas near the campus.⁴⁸ The directory provided the addresses for six segments of the university population: (1) single undergraduate students, (2) married undergraduate students, (3) single graduate students, (4) married graduate students, (5) faculty members, and (6) non-academic personnel. Except for the single undergraduate students, the address of each member of the university population was checked to determine if he lived in the university environs. A 10 per cent sample, adequate to assure statistical accuracy, was taken of the single undergraduate students. The results of this survey are presented in Tables 4 and 5.

The number and characteristics of housing units in each study area near the campus were also tabulated. These data were used as criteria to determine the suitability of housing for various segments of the university population. The data are presented in Table 6.

Student Employment Survey

Student employment was studied to determine its impact on surrounding land use. The study indicated that about 1,500 undergraduate students and 700 graduate students worked part-time. Of these, 500 undergraduate and 450 graduate students were employed on campus. Less than 100 undergraduate students and 20 graduate students were employed in the vicinity

of the campus.

Table 4. The Location of Housing for Various Segments of Georgia Institute of Technology's Population

Place of Residence	Undergraduate		Graduate		Faculty Members	Non- Academic Personnel	Totals
	S*	M**	S	M			
Campus Housing***	3,590	161	126	41	21	25	3,964
Vicinity of Campus	320	82	56	40	33	48	579
Commuters	1,033	682	84	519	434	839	3,583
Not Available	340	8	5	15	0	1	369
TOTALS	5,283	933	271	615	488	905****	8,495

* S = Single.

** M = Married.

*** Includes fraternity, religious organizations, and YMCA housing.

**** Only salaried personnel are considered. The rapid turnover in the hourly personnel does not permit an accurate survey of these persons.

Surrounding Land Use

The area surrounding the Georgia Tech campus has been divided into six study areas. The location of each study area in relation to the campus is shown in Figure 3.

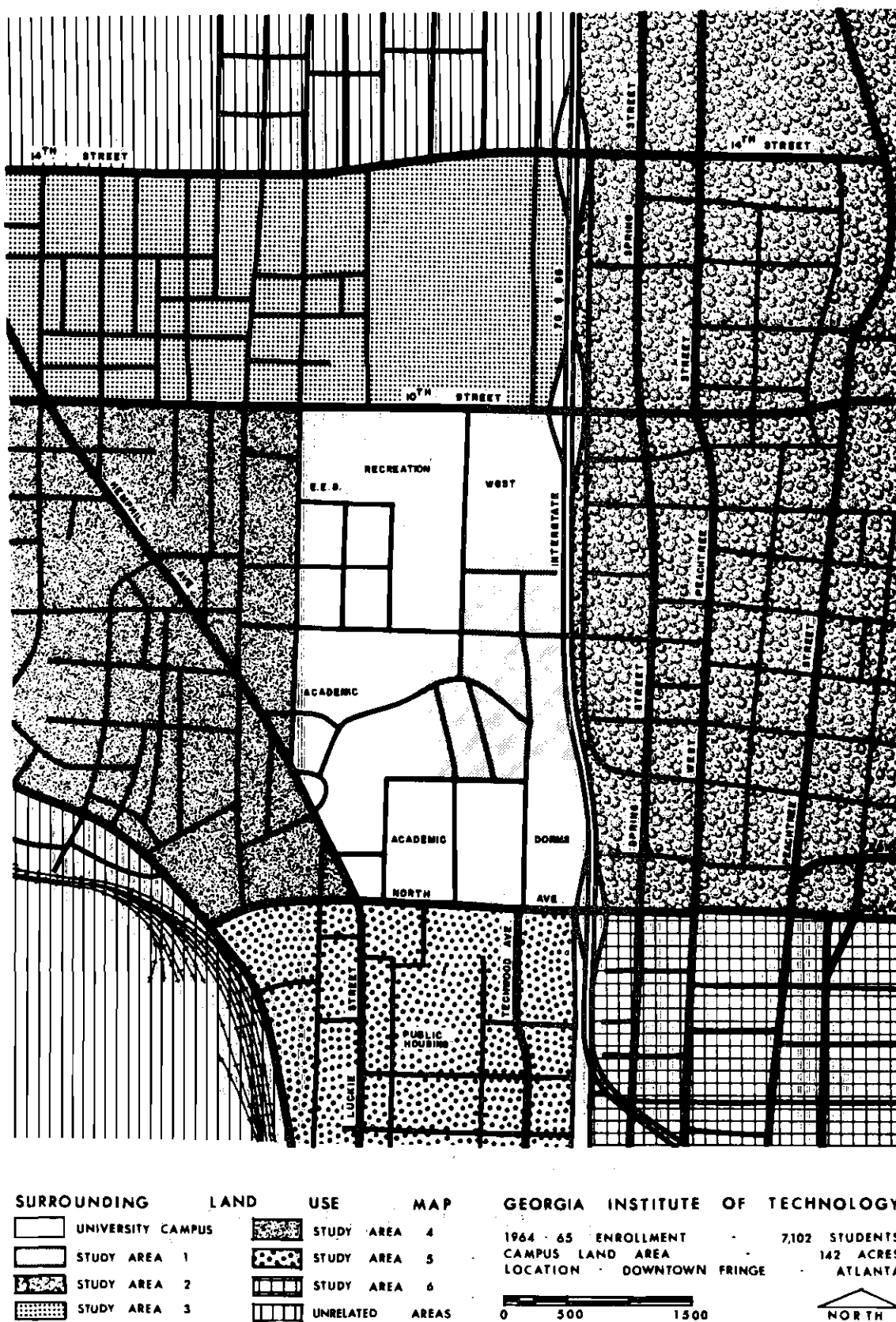


Figure 3. Surrounding Land Area Map, Georgia Institute of Technology.

Table 5. The Distribution of Housing for the Georgia Institute of Technology Population in the Vicinity of the Campus by Study Area

Study Area	Undergraduate		Graduate		Faculty Members	Non-Academic Personnel	Totals
	Single	Married	Single	Married			
1	40	5	9	1	2	3	60
2	250	49	30	20	20	30	399
3	10	20	6	7	5	6	44
4	20	1	9	6	6	7	49
5		14	2	6		1	23
6		3				1	4
Totals	320	82	56	40	33	48	579

Study Area 1. This is a small area dominated by university-related housing. The 24 fraternities, 4 religious centers, and 1 girls' dormitory provide housing for about 1,000 students. Most of the private homes remaining in this area are occupied by Georgia Tech faculty. Other owners rent rooms or apartments to students. Social, recreational, and religious activities for students are also conducted at fraternity houses and religious centers.

The office and research building of the Southern Regional Educational Board (SREB) is located on a tract of land given to it by the State of Georgia. The site plus the services of Georgia Tech mainte-

nance personnel constitute the State's support of the SREB. Occasional use is made of the Georgia Tech Library by SREB staff members.

Table 6. The Number and Characteristics of Housing Units in the Vicinity of the Georgia Institute of Technology Campus by Study Area

Study Area	Total Units	Per Cent Sound	Owner Occupied	Rental	Rent Per Month
1	69	80	14	55	55
2	2,106	88	147	1,959	80
3	506	75	244	262	60
4	573	45	210	363	55
5	1,242	99	13	1,229	35
6	138	10	15	123	50
Totals	4,634	85	643	3,991	N.A.

SOURCE: U. S. Census of Housing: 1960, City Blocks.

O'Keefe High School is located in this study area. Most of the students who attend O'Keefe do not live near the school. O'Keefe is scheduled to be relocated and its site will be used by Georgia Tech.

Study Area 2. This area is characterized by a mixture of residential, commercial, and office uses. The greatest concentration of university population living in the environs is located in this area. This is a result of the large number of available rental units and the

proximity of these units to the campus.

The portion of the area south of Tenth Street is characterized by high-rise apartments, offices, hotels, night clubs, and expensive restaurants. Most of the high-rise apartment buildings contain small and expensive units and do not depend upon the Institute although they do receive a portion of their business from the university population and persons visiting the campus. Faculty members and non-academic personnel without families live in the high-rise structures. A substantial number of single students live in the rooming and boarding houses scattered throughout the area.

The intensity of development north of Tenth Street is somewhat lower. Two- and three-story apartment buildings and offices predominate. This portion of the area has news shops, art galleries, an art theater, delicatessens, and the like which give the area a slightly Bohemian flavor. Many married students live in this area.

A concentration of university-related commercial facilities is located in the southwest corner of this study area. The majority of sales at these stores are attributed directly to Georgia Tech students. The most numerous stores in this area are eating places, laundry and dry cleaning establishments, and barber shops. The influence of Georgia Tech on these stores is illustrated by their names: College Jewelry, Varsity Restaurant, and Tech Laundry.

Offices of 40 architectural, 6 city planning, 50 engineering firms, and the Industrial Development Division of Georgia Tech's EES are located in this study area. The majority of firms are concentrated south of Tenth Street. A sampling of these firms was taken to determine

the factors that influenced their location. The availability of low-rent office space, good transportation facilities, and the proximity to downtown Atlanta and Federal offices were the most frequent reasons cited. In addition, some firms have principals on the Georgia Tech faculty while others indicated that they make use of part-time student labor.

Study Area 3. This study area is primarily an old, single-family neighborhood. More than one-half of the houses in this area are owner-occupied. University-related housing includes university-owned apartments for married students, two fraternity houses, privately-owned apartments, and single-family houses rented by students. An additional 400-unit, university-owned, married student housing project is scheduled to be built adjacent to Tenth Street. Most of the housing that is not owner-occupied is occupied by the university population.

Study Area 4. This area contains mostly single-family homes. Georgia Tech is planning to expand its campus into this study area. The portion of the area northeast of Hemphill Avenue is characterized by sound homes, many of which have already been purchased by Georgia Tech. These are rented either to their former owners or to members of the university population.

The portion of the area southwest of Hemphill Avenue is principally a slum. Only 15 per cent of the structures in this part of the area are sound. None of the university population lives in this area.

A branch bank and a drive-in restaurant which are closely related to the campus are located on North Avenue near Hemphill Avenue.

Study Area 5. The principal use in this area is public housing.

About 25 married students live in the project. The portion of the area west of Luckie Street contains industrial uses not related to Georgia Tech. Georgia Tech owns an apartment building for married students, faculty members, and non-academic personnel as well as a YMCA building on North Avenue. It also has purchased two buildings in the public housing project and uses them as dormitories.

All the commercial uses along North Avenue are related to Georgia Tech. A book store, several eating establishments, two laundries, a movie theater, and a motel are located in this area. Except for the motel, the facilities receive almost all of their business from persons associated with the Institute.

The motel is an 82-unit facility that receives a significant portion--40 to 50 per cent--of its day-to-day business from persons visiting Georgia Tech. University-related patrons include: short-course participants, personnel recruiters, visiting parents and alumni, and sports spectators. In anticipation of increased Georgia Tech-related patronage, the motel is planning a 50-unit addition next year.⁴⁹

Study Area 6. This area is principally a commercial area and is not related to the University. The small amount of housing remaining in this area is deteriorated and not suitable for the university population.

Georgia State College

Georgia State College is a liberal arts and business administration college located in downtown Atlanta. The Georgia State campus is within one-quarter mile of "Five Points" which is considered the center of downtown Atlanta.

The campus consists of only two city blocks; however, a major expansion program is planned. The enrollment has doubled in the past three years to 6,000. An enrollment of 25,000 is anticipated by 1975.

All of Georgia State's students are enrolled in either liberal arts or business administration programs. Graduate education was not begun until the fall of 1961. Many of Georgia State's students attend classes on a part-time basis. The College has a faculty of 325, of which 106 are part-time members. In addition, it employs 587 non-academic personnel.

University Facilities

Georgia State College has few facilities that influence surrounding land use. Most of the campus is covered with academic buildings or parking lots. A bookstore and a cafeteria are the only university-operated commercial enterprises on the campus. The College has a computer and a significant business research program. The computer is used only for academic purposes.⁵⁰

Surrounding Development

Unlike the other universities, Georgia State College has not influenced its environs, but has been strongly influenced by them. Many of Georgia State's students and faculty are persons who work in the downtown area and in the nearby government complex. The emphasis on business education is another reflection of the influence of the surrounding area on the College.

Georgia State does not provide housing for its population nor is private, university-related housing located near the campus. Most of the students, faculty, and personnel of Georgia State live within the

metropolitan area and commute. Housing for out-of-town female students is provided by Church Homes; however, this facility is located beyond the university environs.

The area surrounding the campus has been divided into six study areas. The location of these areas is shown in Figure 4.

Study Area 1. Grady Hospital, the City Auditorium, parking lots, a park, and several small industrial firms are located in this area. Grady Hospital is a large city-county general hospital. Georgia State has developed a hospital administration program and relies upon the personnel of Grady to teach many of the courses in this program. The City Auditorium is used by the College for various classes and activities. Much of the land area surrounding the campus is used for parking which serves the College, the City Auditorium, and nearby businesses.

Study Area 2. Much of the land in this study area is part of an urban renewal project. The Hartford Insurance Company recently completed a major office building that is adjacent to the campus. One of several reasons given by Hartford for choosing this site was convenient access to Georgia State's Insurance Program. Hartford personnel will be able to receive periodic training at Georgia State.⁵¹

Except for the Hartford building, the motels, office buildings, and apartments that have located on redeveloped land are related not to Georgia State, but to downtown Atlanta.

Study Area 3. Land use in this, the downtown section of Atlanta, is typical of the downtown section of most large cities--office buildings, department stores, restaurants, parking garages, and the like. Georgia State has little influence on this area.

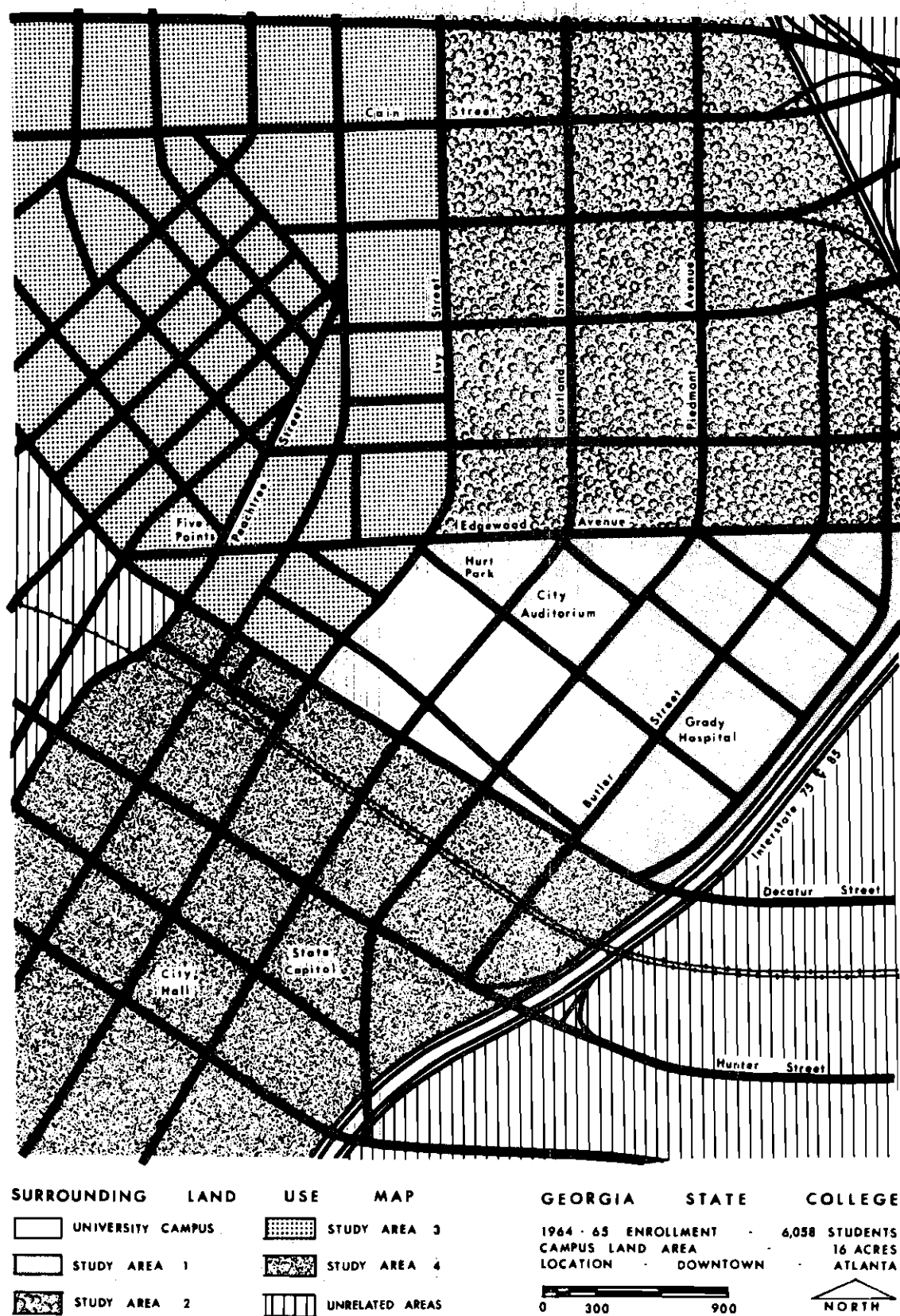


Figure 4. Surrounding Land Area Map, Georgia State College.

Study Area 4. A growing government complex occupies the majority of land in this study area. State, county, and municipal offices are located in the area. Many of the persons working in government offices attend classes at Georgia State.

The western portion of this area contains manufacturing and warehousing uses. There is no relationship between these uses and Georgia State College.

CHAPTER V

IMPLEMENTATION TOOLS

Three tools that may be used by communities or universities to achieve a desirable development pattern in the university environs are:

(1) zoning, (2) urban renewal, and (3) university investment.

Zoning

Zoning is widely used to regulate the use of land adjacent to university campuses. Most zoning ordinances apply the customary districts in which are regulated the use of land throughout the community--residential, commercial, and industrial--to the areas adjacent to the campus. Although these standard zoning districts permit some types of university-related uses, the majority also permit land uses which are not so related. For example, universities would like to encourage types of research firms normally permitted in industrial districts to locate near their campuses but not factories, warehouses, and truck terminals which are also usually permitted in industrial districts.

In neighborhood shopping districts located near universities the shops and service facilities needed by the university population are permitted. In these districts it is customary to permit other commercial uses which do not serve the university population. In addition, neighborhood shopping districts often impose off-street parking restrictions that are unrealistic in view of the walk-in nature of university-oriented commercial areas. Zoning ordinances that attempt to regulate the univer-

sity environs with community-wide districts are usually inadequate.⁵²

In order to permit university-related uses while prohibiting other types of uses, some communities have established special zoning districts. Four representative examples of zoning ordinances that contain such districts are those of: (1) Ann Arbor, Michigan; (2) Evanston, Illinois; (3) Princeton, New Jersey; and (4) Duval County, Florida.

Ann Arbor, Michigan

Generally, the Ann Arbor zoning ordinance regulates land surrounding the campus of the University of Michigan by using customary community-wide zoning districts. However, where unique university-related facilities are needed, special zoning districts are employed.

The community-wide zoning districts located near the campus include: R-4, Multi-Family District; C-1, Local Business District; and C-2A, Central Business District. These districts permit some university-related uses such as fraternity and sorority houses, rooming houses, and student cooperatives; however, potentially incompatible uses such as mortuaries are also permitted.

Three special districts are: (1) Public Land District, (2) Two-Family and Student Housing District, and (3) Research District.

The Public Lands District includes the University of Michigan campus and some adjacent areas. In addition to colleges and universities, this district permits certain other public and semi-public uses such as primary and secondary schools, cultural facilities, hospitals, homes for the elderly, and the like.⁵³

Two-Family Dwelling and Student Housing Districts are located adjacent to the dormitory complex. In addition to the uses permitted in

the Single-Family District, two-family dwellings, fraternity and sorority houses, student cooperative houses, certain private clubs, and the serving of meals from a common kitchen are permitted.⁵⁴

The Research District is located near the North Campus (Engineering School). The permitted uses in this District include, "any uses which are charged with the principal function of industrial, scientific, or business research; any subordinate use customarily incidental to the principal use; and limited manufacturing operations."⁵⁵

The provisions of the three special university-related districts in the Ann Arbor zoning ordinance are included in the Appendix of this thesis.

Evanston, Illinois

The Evanston zoning ordinance contains three separate University Districts--U1, U2, and U3 Districts--which are located in the vicinity of the campus of Northwestern University.

The U1 District is a transition district between U2 and U3 Districts and Single-Family Residential Districts. Only parking and play fields incidental to U2 or U3 uses are permitted in addition to those uses included in Single-Family Districts.⁵⁶

The U2 and U3 Districts permit the uses customarily included in Single-Family Districts plus colleges, universities, theological schools, two-family dwellings, row houses, multi-family dwellings owned or operated by a university for housing for students and staff, and accessory uses. Larger floor area ratios and building heights for high density student housing are permitted in the U3 District. Art galleries, libraries, museums, churches, institutional headquarters for educa-

tional, fraternal, professional, or religious non-profit organizations; private clubs; public utility uses; schools; multi-family dwellings other than those owned by a university; and boarding or rooming houses owned by a university are permitted if a Special Use Permit is obtained from the Zoning Board of Appeals.⁵⁷

The following procedure has been established for the issuance of Special Use Permits. A request is made to the Board of Appeals which then reviews the request and holds a public hearing. The Board then recommends that the City Council either issue or withholding the permit. Before the Board can submit a positive recommendation, it must determine that the use will not impair the public health, safety, and welfare and that the use will not cause appreciable injury to the value of other property in the neighborhood. The Board of Appeals may recommend and the City Council may provide such conditions and restrictions upon the construction, location, and operation of a special use as may be deemed necessary to promote the general objectives of the zoning ordinance.⁵⁸

Princeton, New Jersey

The Princeton zoning ordinance has an Educational District that includes the campus of Princeton University and "surrounding land areas extending out to a reasonable distance." Single-family houses; non-profit activities of any non-profit educational institution; and the housing of the faculty, students, and staff of any such institution are permitted as a matter of right. Schools, churches, hospitals and other health facilities, cemeteries, camps, and home occupations require special permits.⁵⁹

Duval County, Florida

The Duval County zoning ordinance contains an Institutional District. This district is found in the vicinity of Jacksonville University, as well as near other institutions in the county. In the vicinity of Jacksonville University, the area zoned Institutional includes the University and surrounding land areas within about three blocks of the campus.

The uses permitted in this district include educational, health, and cultural institutions; single and multi-family dwellings, dormitories, hotels, and motels; public and semi-public uses; office buildings; research laboratories; student centers; and parking facilities. Cafeterias, restaurants, and similar eating establishments are permitted if they are accessory to an institution or are accessory to a hotel, motel, apartment house, dormitory, or office building and are primarily for the residents, employees, and clients of the primary use and have only limited contact with the general public. The commercial facilities are limited to those selling such items as books, optical, medical, surgical, school, and scientific supplies and services directly related to the University. The sale of such items must be primarily for the convenience of employees, visitors, and clients of the University rather than the general public.

In order to establish that a proposed commercial use is related to the University, the procedure described below is followed. The applicant states the relationship of his business to the University. The University is then given notice by the Zoning Director and may have a hearing before the Zoning Director regarding the relationship to the

University of the proposed use prior to the issuance of a permit.⁶⁰

The provisions of the Institutional Zone in the Duval County zoning ordinance are included in the Appendix of this thesis.

Urban Renewal

Most states have adopted enabling legislation to permit cities and in some cases counties to undertake urban renewal projects. The purpose of urban renewal is to rehabilitate or redevelop blighted areas in order to make these areas compatible with long-range community development plans. The Federal Government provides financial incentives to induce local governments to initiate urban renewal projects. Federal advances, loans, and grants are made to a state-authorized local public agency (the local urban renewal agency).

Federal funds defray two-thirds of the net cost of urban renewal projects in cities with a population of more than 50,000; the state and local governments, through the local urban renewal agency, contribute the remaining one-third. In cities with a population of less than 50,000 the Federal Government contributes three-fourths of the net project cost. The local share may take the form of cash grants, noncash grants-in-aid, or a combination of both. Noncash grants-in-aid include expenditures made by state or local agencies in the project area for public improvements, such as streets, sewers, schools, parks, playgrounds, and the like.

In 1959, the Housing Act was amended to add Section 112 allowing communities to claim as noncash grants-in-aid certain property expenditures made by an educational institution. These expenditures include

those for: (1) the acquisition of land, buildings, and structures; (2) the demolition of buildings and structures; and (3) the relocation of displaced occupants.

In order for an expenditure by a university to be claimed as a Section 112 credit, the university must be within one-quarter mile of an authorized urban renewal project and the property involved must be within one-quarter mile of both the university and the urban renewal project. All qualified expenditures made during a seven-year period prior to the authorization of a renewal project can be claimed as noncash grants-in-aid. In some cases, Section 112 credits exceed the local project cost. When this occurs they can be "pooled" and applied to other renewal projects.⁶¹

Until the adoption of Section 112, only a few renewal projects were undertaken in the vicinity of universities. These were principally in the vicinity of large universities in large cities--the University of Chicago; Columbia University, New York City; the University of Pennsylvania, Philadelphia; and others.

In the first three years after Section 112 was adopted (1959-1962), 77 universities made use of its provisions. Some representative Section 112 projects include: a 47-acre clearance project undertaken for an industrial research park adjacent to the campus of Illinois Institute of Technology in Chicago; a 12-acre clearance project in Columbia, South Carolina, intended for the expansion of the Converse College campus (enrollment 600); and the 488-acre University Circle project in Cleveland, intended for institutional expansion and residential rehabilitation.⁶²

The University's interest in urban renewal is twofold: (1) as a potential purchaser and redeveloper of project land and (2) in the revitalization of surrounding neighborhoods. A university may acquire property by a negotiated sale at a substantially lower cost due to a Federal subsidy than it would normally have to pay in the open market. By taking advantage of this financing mechanism, universities have been able to expand existing campuses or to create completely new campuses. The improvement of the surrounding neighborhood attracts university-related facilities to the university environs. The community or university may also control the use of land sold to others by the use of deed restrictions.

Urban renewal has broad application for implementing various development objectives in the university environs. Basically three types of action can be taken through urban renewal: conservation, rehabilitation, and redevelopment.⁶³

1. Conservation. The objective of a conservation project is the preservation of built-up areas in good condition by improving municipal services and encouraging private groups to maintain their facilities.

2. Rehabilitation. The objective of a rehabilitation project is the improvement of predominantly built-up areas threatened by blight through the demolition of selected sub-standard structures; the repair and modernization of existing buildings; and the providing of public improvements and services.

3. Redevelopment. The objective of a redevelopment project is the revision or replacement of existing land uses which are sub-standard or counter to the long-range redevelopment plans for the area.

In order to qualify for urban renewal, an area must be declared blighted or deteriorated. The Federal Government has specific eligibility criteria for renewal projects. Twenty per cent of the buildings within the project must have one or more building deficiencies such as the lack of plumbing facilities or structural deficiencies and the proposed project area must have at least two environmental deficiencies such as unpaved streets or lack of adequate utilities to qualify for renewal treatment. Some states have additional eligibility requirements. State requirements vary considerably.⁶⁴

If an area qualifies, either an urban renewal project or a general neighborhood renewal plan (GNRP) can be undertaken. An urban renewal project includes a small area that can be completed over a short period of time. A GNRP contains two or more renewal projects that are scheduled over a ten-year period. Generally, GNRP's contain a variety of renewal treatments and several types of reuse. A GNRP permits the coordination of urban renewal with the schedule for campus improvements and expansion.

Hyde Park-Kenwood in Chicago, University Circle in Cleveland, and University City in Philadelphia are projects that illustrate the potential of urban renewal for implementing a development plan for the university environs. The planners of these projects have considered the impact of the university on the surrounding area and are attempting to create university-oriented environments.

The University of Chicago was active in the planning and execution of the Hyde Park-Kenwood urban renewal project. The original project, undertaken in 1954, contained 48 acres of deteriorated residential property adjacent to the campus. The initial project was expanded into

a 592-acre GNRP and is scheduled for completion in 1966 with an expenditure of \$195 million. Six hundred dwelling units located on 101 acres of land have been cleared. Most of the remaining area is being rehabilitated.⁶⁵

There are two reasons for undertaking the Hyde Park-Kenwood urban renewal project. The primary purpose was to improve the residential areas in the vicinity of the University of Chicago so that a greater percentage of its faculty would be attracted to the university environs. Many faculty members have found housing in the rehabilitated structures and in the 49 acres that were cleared for new housing. The secondary purpose of the project was to provide sites for public and semi-public buildings. Forty-four of the acres that were cleared have been used for this purpose. Only eight acres that were cleared in the Hyde Park-Kenwood area have been reused for commercial purposes.⁶⁶

University Investment

Two methods used by universities to improve their environs by investment are: (1) by constructing facilities or acquiring land and (2) by forming development corporations.

Construction of Facilities and Acquisition of Land

Many universities build related facilities in the vicinity of their campuses. This has been done either because the facilities represented a good investment for university funds or the facilities were needed to further the university's educational objectives and were not likely to be built by private developers.

A recent study for the University of Pennsylvania recommended that

the University participate directly in an urban renewal project adjacent to the campus. The study recommended that the University consider building a 300-room hotel and leasing it to a management corporation. The hotel was considered to be a potentially-profitable investment. Another study suggested that the University construct shopping facilities and lease these to private merchants.

Other universities have built housing, commercial facilities, and research facilities to fill a need for their populations or to attract university-related developments. The University of Oklahoma at Norman recently built a computer center in order to attract research and development firms. The computer center will probably not make a "profit"; however, the additional potential jobs for students and faculty and the enlargement of the scientific community will assist the University to achieve its educational objectives. Although the center is about one mile from the campus, it illustrates an attempt of a university to attract related development by constructing certain facilities.

Some universities have established land reserves to implement the objectives of a development plan. The purchase of land gives the university control over its use. This control can be retained after the land is sold by including deed restrictions in the title to the land. If the land proves to be unnecessary for expansion or for related uses, it can be resold, usually at a profit.

Indiscriminate purchases of land or use of deed restrictions may become a blighting influence on surrounding areas. Property owners may reason that the university will eventually acquire their land and that major improvements should be avoided. Deed restrictions placed on land

resold to private developers usually control the use of land for long periods of time. They are virtually impossible to modify until the time period expires.

Among the universities that have established land reserves are the University of Pennsylvania and the University of California. The University of Pennsylvania recently purchased two properties--Indigent Widows' Home and Tracy Hotel--well in advance of need. In this case, the properties were leased back to their original owners for 20 years. The owners immediately gained a substantial amount of cash and a guarantee that their property would not be taken by the university for at least 20 years. The original owners can use the cash to improve their property and to plan for the construction of new facilities. The university gained control over key properties before the price of these properties became inflated.⁶⁷

The three new campus sites of the University of California--at San Diego, Santa Cruz, and Irvine--each have a land reserve of about 200 acres. The land is to be used for university extension activities, affiliated hospitals, university-community cultural activities, related research, and for other appropriate unforeseen university or university-related uses. University officials believe that the existence of the land reserve will keep the price of university-related housing at reasonable levels. Private landlords face the threat of additional university housing being constructed on the land reserve if they raise their prices beyond a reasonable level.⁶⁸

Development Corporations

Development corporations have been established by several univer-

sities to implement planning programs for the university environs. These corporations are usually composed of the university and other institutions. The more successful of these corporations are the West Philadelphia Corporation (University of Pennsylvania, Drexel, and other institutions); the University Circle Foundation in Cleveland (Western Reserve University, Case Institute, and others); and the Oakland Corporation (University of Pittsburgh, Carnegie Institute and others).

Development corporations implement planning objectives directly. Their corporate charters permit them to purchase land and construct facilities in the vicinity of the university. They may also resell land to universities and other institutions for expansion.

The program of the University Circle Foundation in Cleveland illustrates the possible activities of a development corporation. The foundation was established to implement a development plan for a 488-acre area of Cleveland which includes 34 institutions. The foundation has acquired land that is needed for institutional expansion and related uses. The resale price of land to institutions is an average per acre of all land purchasing costs. The Foundation is permitted to sell revenue bonds and construct self-liquidating facilities. Several parking structures have been built. The parking is located so that it can be used by several institutions. This makes unnecessary the duplication of parking facilities within the area. The Foundation is presently considering constructing housing facilities.⁶⁹

APPENDIX

APPENDIX A

ANN ARBOR, MICHIGAN ZONING ORDINANCE

R2B--Two-Family Dwelling and Student Housing District:

1. Permitted Principal Uses

- a. One-family dwelling, subject to all the regulations that apply in the RIC One-Family Dwelling District.
- b. Two-Family Dwelling.
- c. Fraternity houses, sorority houses and student cooperative houses, for which minimum lot area shall be 350 sq. ft. per occupant. Nothing herein shall permit multiple-family developments.
- d. Churches.
- e. Any building used as the headquarters and as a location for the activities of the various womens clubs of the City of Ann Arbor, the use of which is limited to its members and their guests, and which is not intended for lodging purposes, nor for the service of meals, except as reasonably necessary to the activities of the club.

2. Permitted Accessory Uses

- a. Those permitted in the "R1" Districts.
- b. The serving of meals from a common dining room and kitchen.

PL--Public Lands District:

1. Intent

This district is designed to classify publicly-owned uses and land.

2. Permitted Principal Uses

- a. Outdoor public recreational uses, such as: playgrounds, playfields, golf courses, boating areas, fishing sites, camping sites, parkways and parks. No structure shall be

erected or maintained upon dedicated park land which is not customarily incidental to the principal use of the land.

- b. Natural open space, such as: conservation lands, wild-life sanctuaries, forest preserves.
- c. Developed open space, such as: arboreta, botanical and zoological gardens.
- d. Educational services, such as: public primary and secondary schools, and institutions of higher education.
- e. Cultural services, such as: museums and art galleries.
- f. Public-service institutions, such as: hospitals, sanatoria, homes for the elderly, children's homes, and correctional institutions.
- g. Public utility installations, such as: water pumping and treatment plants and reservoirs; sewage treatment plants.
- h. Municipal airports.
- i. Civic center.

3. Permitted Accessory Uses

- a. Any use customarily incidental to the permitted principal uses.
- b. Signs.
- c. Off-Street Parking as required by Chapter 59.

RD--Research District:

1. Intent

This district is designed solely for research facilities to serve the needs of commerce, industry and education. The prime characteristics of this district are the low intensity of land coverage and the absence of nuisance factors such as,

- a. The production of sound discernible at the lot lines shall not exceed the average intensity of the street and traffic noise at the lot lines.
- b. The production of heat or glare shall not be discernible at the lot lines.

- c. The emissions of air pollution shall not be detrimental to the public welfare.

2. Permitted Uses

Any uses which are charged with the principal function of research, such as the following:

- a. Industrial research, development and testing laboratories and offices
- b. Scientific research, development and testing laboratories and offices
- c. Business research, development and testing laboratories and offices
- d. Pilot plant operations and testing activities

These principal uses shall in all cases devote, use and maintain usable floor area no less than the amount devoted, used and maintained for those operations permitted under Permitted Accessory Uses section b.

Those Permitted Accessory Uses under Section a. shall not be considered as a part of the computations for the usable floor area of the "principal use" or "limited manufacturing use".

3. Permitted Accessory Uses

- a. Any subordinate use customarily incidental to the permitted "Principal use" of the premises.
- b. Limited manufacturing operations which are specifically related to and support the "principal use".
- c. Signs
- d. Off-Street Parking as required by Chapter 59.

APPENDIX B

DUVAL COUNTY, FLORIDA ZONING ORDINANCE

SECTION 2-E Zone Institutional

1. NATURE OF DISTRICT: A district centered upon an educational, health or cultural institution and including other uses related to, incidental to or serving the dominant institution or institutions with any commercial activity limited primarily to serving employees, students, visitors, patients and clients of the institutions, having only limited contact with the general public and excluding any drive-in or highway service facilities.
2. AREA: All areas shown as Institutional on Zoning Maps on file with the Board of County Commissioners of Duval County, Florida.
3. USES: No land, no body of water and no structures shall be put into use, and no building shall be hereafter erected, constructed, moved, reconstructed or structurally altered for any purpose in any Institutional Zone which is designed, arranged or intended to be used or occupied for any purposes other than the following:
 - a. Educational, health or cultural institutions including but not limited to hospitals, colleges, universities, research facilities, museums and libraries.
 - b. Residences including single and multi-family dwellings, apartments, dormitories, lodging houses, hotels, and motels.
 - c. Public and semi-public uses including churches, schools, municipal or county recreation buildings, parks, playfields, government-owned reservations and governmental administrative buildings, gymnasiums.
 - d. Office buildings, professional offices, clinics, banks and savings and loan associations.
 - e. Nursing, convalescent and foster homes when accessory to a hospital.

- f. Research laboratories, computer centers and other professional and managerial services, provided such use does not adversely affect the present or future development of the surrounding area by reason of noise, vibration, odor or other noxious characteristics.
 - g. Student centers, sorority or fraternity houses.
 - h. Cafeteria, restaurant or similar eating establishment provided: it is accessory to an institution and located on the same site or accessory to a hotel, motel, apartment house, dormitory, or office building, and located in the same building, and provided it is primarily for the residents, employees, and clients of the district and has only limited contact with the general public.
 - i. The sale of such items as books, optical, medical, surgical, school and scientific supplies and services, directly related to the educational, health, or cultural activities of the dominant installation (institution or institutions), provided the sale of such goods and services is for the convenience of employees, visitors, and clients of the institutions and not primarily for the general public, provided further that the dominant institutions shall be afforded notice and a hearing before the Zoning Director prior to the issuance of a permit on the question of the relationship to the institution of the proposed use.
 - j. Terminal facilities for air, highway, rail and water transportation serving the district.
 - k. Accessory uses including signs not to exceed twelve square feet, identifying the use of the building, attached to the building and not extending more than six inches therefrom.
4. HEIGHT: No building or structure shall be erected to a height in excess of four (4) stories or in excess of sixty (60) feet, unless built of fire resistive construction.

Church spires, Flag and Radio poles are exempt from these provisions.

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